

1/5 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTRONIC COMPUTERS SERVE TEXTILE INDUSTRY WORKERS -U-
AUTHOR--TARASOV, B.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, SOTSIALISTICHESKAYA INDUSTRIYA, 3 FEB 70, P 2
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--COMPUTER APPLICATION, TEXTILE INDUSTRY, AUTOMATIC CONTROL
SYSTEM, INFORMATION CENTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/0046 STEP NO--UR/0533/70/000/000/0002/0002
CIRC ACCESSION NO--AN0113042
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--ANO113042

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DECEMBER PLENUM OF THE CC CPSU SET AS ONE OF THE IMPROTANT TASKS OF FURTHER IMPROVING THE METHODS OF ORGANIZING PRODUCTION THE CREATION AND MASTERING OF AUTOMATED SYSTEMS OF CONTROL AND INFORMATION PROCESSING ON THE BASIS OF THE USE OF MATHEMATICAL METHODS, ELECTRONIC COMPUTERS AND CONTROL MACHINES. THIS FIELD OF ENDEAVOR IS PARTICULARLY IMPORTANT TO THE MANY BRANCHES OF LIGHT INDUSTRY: IT INCLUDES MORE THAN 3,500 ENTERPRISES WHICH ARE MANAGED BY A MULTITUDE OF MAIN ADMINISTRATIONS, TRUSTS AND PRODUCTION ASSOCIATIONS. NOW, A BROAD NETWORK OF COMPUTER CENTERS IS BEING CREATED IN LIGHT INDUSTRY. THE MAIN INFORMATION COMPUTING CENTER OF THE USSR MINISTRY OF LIGHT INDUSTRY IS ALREADY IN OPERATION IN IVANOVO, AND THE HEAD COMPUTATION CENTER OF THE MINISTRY OF LIGHT INDUSTRY OF THE UKRAINE IS OPERATING IN KIEV. COMPUTING CENTERS OF PRODUCTION ASSOCIATIONS, ENTERPRISES AND INSTITUTES HAVE BEEN ORGANIZED IN ODESSA, KHERSON, ROSTOV, RIGA, TALLIN, AND AT THE KALININ AND IVANOVO WORSTED WEAR COMBINES. A NUMBER OF SCIENTIFIC RESEARCH AND PLANNING ORGANIZATIONS ARE WORKING OUT AND INTRODUCING INDIVIDUAL SUBSYSTEMS OF MANAGEMENT FOR ENTERPRISES (ASUP: AVTOMATIZIROVANNAYA SISTEM UPRAVLENIYA PREDPRIYATIYEM) OR BRANCES (GASU: OTRASLEVAYA AVTOMATIZIROVANNAYA SISTEMA UPRAVLENIYA). THE MAIN INFORMATION COMPUTING CENTER OF THE USSR MINISTRY OF LIGHT INDUSTRY IS NATURALLY INVOLVED IN THIS MATTER. OUR OBLIGATION ALSO INCLUDE THE DEVELOPMENT AND INTRODUCTION OF MEASURES TO MAKE EFFECTIVE USE OF COMPUTER EQUIPMENT.

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0113042

ABSTRACT/EXTRACT--ALTHOUGH OUR CENTER BEGAN OPERATIONS ONLY THREE YEARS AGO, ITS SPECIALISTS HAVE ALREADY WORKED OUT AND SOLVED A NUMBER OF MAJOR TASKS. THUS, FOR EXAMPLE, THE PLANNING AND ECONOMIC ADMINISTRATION OF THE MINISTRY IS USING OUR CALCULATIONS TO DETERMINE THE NEED FOR UNBLEACHED GREY CLOTH, YARN AND ALL TYPES OF RAW MATERIAL FOR THE PRODUCTION OF READY FABRICS. OPTIMAL PLANS FOR THE RELEASE OF YARN HAVE BEEN DETERMINED FOR A NUMBER OF MAIN ADMINISTRATIONS AND LARGE ENTERPRISES USING ELECTRONIC COMPUTERS. SEVERAL FACTORIES ARE USING THE RECOMMENDATIONS OF THE CENTER IN SELECTING THE OPTIMAL COMPONENTS OF MIXTURES OF COTTON, THESE CALCULATIONS WERE MADE UNDER THE LEADERSHIP OF T. M. GRISHIN. THE ELECTRONIC COMPUTER ALSO COMPUTES NETWORK SCHEDULES FOR BUILDING ORGANIZATIONS AND DESIGN BUREAUS. ALTHOUGH IT IS NOT MY PURPOSE TO DESCRIBE ALL THE CENTER'S ACTIVITIES, LET ME NOTE THE FACT THAT THEIR TOTAL ANNUAL ECONOMIC EFFECT UPON THEIR INTRODUCTION INTO INDUSTRY, ACCORDING TO THE ESTIMATES OF THE PLANNERS, COMPRISES APPROXIMATELY SIX MILLION RUBLES. THIS WOULD SEEM TO BE DIRECT EVIDENCE OF A PROFITABLE OPERATION. HOWEVER, THE DEVELOPMENT AND INTRODUCTION OF COMPUTER EQUIPMENT AND CONTROL SYSTEMS CANNOT BE SAID TO BE PROCEEDING SMOOTHLY EVERYWHERE, UNFORTUNATELY. BY WAY OF EXAMPLE, WE CAN CITE THE IVANOV AND KALININ WORSTED WEAR COMBINES. THE NATIONAL ECONOMIC PLAN OUTLINED THE INTRODUCTION OF THE FIRST LINES OF AUTOMATED CONTROL SYSTEMS AT THESE ENTERPRISES IN 1970, BUT IT IS ALREADY CLEAR THAT THE RATES OF PLANNING AT THE SISTEMPROYEKT INSTITUTE WILL NOT PERMIT CARRYING OUT THIS PLAN ON TIME.

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0113042

ABSTRACT/EXTRACT--AT THE IVANOVO COMBINE, WORK IS IN ITS FIFTH YEAR ALREADY. CONSIDERABLE MEANS AND TIME HAVE BEEN SPENT. BUT NO PERCEPTIBLE RESULTS HAVE BEEN OBTAINED. THIS YEAR, IT HAS OUTLINED FOR THE SISTEMPROYEKT INSTITUTE TO FINISH WORK ON THE TECHNICAL PLAN FOR THIS ENTERPRISE. BUT A SIMILAR PLAN CREATED BY IT FOR THE KALININ COMBINE HAS SUBSTANTIAL SHORTCOMINGS. WHAT IS THE MATTER? THE REASON, AS WE SEE IT, IS THAT THE INSTITUTE DOES NOT HAVE AVAILABLE TO IT THE NECESSARY CADRES OF SPECIALISTS WHO ARE FAMILIAR WITH WORSTED WEAR PRODUCTION. ITS CO WORKERS HAVE INADEQUATELY STUDIED THIS PRODUCTION AND HAVE NOT BEEN ABLE TO SET UP CREATIVE COOPERATION WITH THE COLLECTIVES OF THE ENTERPRISES. THE OPINION HAS BEEN CREATED THAT THE INSTITUTE HAS OVEREXTENDED ITSELF IN TRYING TO PLAN ASUPS FOR SEVERAL DIFFERENT BRANCES OF INDUSTRY. THE CONCLUSION THRUSTS ITSELF FORWARD THAT THE USSR MINISTRY OF LIGHT INDUSTRY SHOULD ORGANIZE THE PLANNING OF AUTOMATED CONTROL SYSTEMS THROUGH ITS OWN EFFORTS. THIS WOULD REQUIRE THE MORE EXTENSIVE ENLISTMENT OF THE AID OF BRANCH SCIENTIFIC RESEARCH AND PLANNING INSTITUTES AND SPECIAL DESIGN BUREAUS, AND DETERMINATION IN EACH BRANCE OF THOSE ENTERPRISES FOR WHICH STANDARD TECHNICAL PLANS MUST BE CREATED. BUT ALL THESE STEPS ARE COMPENSATED FOR BY THE FACT THAT THE CREATION OF AUTOMATED CONTROL SYSTEMS IS CONSIDERABLY FASTER AND CHEAPER. IT MUST BE SAID THAT THE USE OF MATHEMATICAL METHODS IN PLANNING AND MANAGEMENT IS DEALYED BY THE FACT THAT THE PLANNING SAGENCIES, AND CERTAIN DIVISIONS OF THE USSR STAE PLANNING COMMISSION IN PARTICULAR, SOMETIMES DO NOT PAY ATTENTION TO THE CALCULATIONS MADE BY THE COMPUTERS.

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0113042

ABSTRACT/EXTRACT--ONE OTHER THING IS DISTURBING. MANY ORGANIZATIONS CONCERNED WITH THE INTRODUCTION OF ECONOMIC MATHEMATICAL METHODS AND COMPUTER EQUIPMENT HAVE NOT CREATED, BUT THERE IS NO UNIFIED SUPERVISORY CENTER. THE USSR CENTRAL STATISTICAL ADMINISTRATION PROVIDES ONLY METHODS INSTRUCTIONS ON PLANNING AND RECORDING ELECTRONIC COMPUTER OPERATIONS. THE DIVISION OF COMPUTER EQUIPMENT INTRODUCTION OF THE USSR STATE PLANNING COMMISSION IS ALSO FAR FROM THE SOLUTION OF PRACTICAL PROBLEMS. AND THE USSR MINISTRY OF INSTRUMENT MAKING, MEANS OF AUTOMATION AND CONTROL SYSTEMS, WHICH IS CONCERNED WITH MAINTAINING AGREEMENT BETWEEN THE TECHNICAL PLANS OF OASUS AND ASUPS, IS NOT IN A POSITION TO COPE WITH THE CONTINUOUSLY GROWING DEMANDS OF INDUSTRY.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--09GCT70
TITLE--EFFECT OF THE PARAMAGNETISM OF CONJUGATED POLYMERS AND THEIR
COMPLEXES ON NMR SPECTRA AND MACROMOLECULAR MOTION -U-
AUTHOR-(05)-MAKLAKOV, A.I., SHEPELEV, V.I., GOLDGAMMER, K.A., ZGADZAY,
E.A., TARASOV, B.G.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 394-400
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--PARAMAGNETISM, CONJUGATED POLYMER, COMPLEX COMPOUND,
MACROMOLECULE, SCHIFF BASE, PYRIDINE COMPLEX, ACETYLENE, ELECTRON SPIN,
NMR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0251 STEP NO--UR/0459/70/012/002/0394/0400
CIRC ACCESSION NO--AP0106907
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--0900170

CIRC ACCESSION NO--AP0106907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NMR SPECTRA WERE OBTAINED FOR
POLY(SHIFF BASES) (I) CONTG. :CHCH:NRN: (R EQUALS PYRIDINEDIYL) GROUPS,
I COMPLEXES WITH BR, POLY(PHENYLACETYLENE) (II), AND II COMPLEXES WITH
IODINE AT 77-330DEGREES K. ELECTRON SPIN LATTICE RELAXATION TEMP.
DEPENDENCE WAS OBSO. THE CONDITIONS WERE DETO. UNDER WHICH THE
PARAMAGNETIC CENTERS PRESENT IN THESE POLYMERS MAY HAVE AN EFFECT ON THE
2ND MOMENT OF NMR ABSORPTION LINES. AN ANOMALOUS EFFECT OF HALOGENS ON
THE MOL. MOBILITY OF I AND II WAS OBSO.

UNCLASSIFIED

USSR

UDC:662.215.2

AL'TSHULER, L. V., BALABANOV, A. V., BATALOV, V. A., RODIONOV, V. A.,
TARASOV, D. M., Moscow

"X-Ray Structural Study of the Initial Stage of Development of an Underground Explosive Cavity in Sandy Soil"

Novosibirsk, Fizika Goreniya i Varyva, Vol. 6, No. 3, Sep 70, pp. 363-373

Abstract: The authors studied the kinetics of development of underground explosive cavities in various media, including study of the earliest phases of these processes, in order to determine the effective mechanical characteristics of soils, to test and clarify the equations of state of the explosion products and current calculation methods. The experimental observation was performed by transmission of x-rays through massive sections containing explosive charges in short bursts of x-rays. This report describes the experimental methodology and data produced in non-saturated sand, and also presents idealized mathematical calculations of underground explosions in compressible media, which are used for interpretation of the results produced.

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USSR

UDC: 533.697

GIMRANOV, E. G., ~~TARASOV, F. F.~~

"On Calculation of an Energy-Isolated Flow in Long Channels"

Tr. Ufim. aviats. in-ta (Works of the Ufa Aviation Institute), 1970, vyp. 17, pp 35-38 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B395)

Translation: A procedure is outlined for calculating energy-isolated flows in long channels with regard to the coefficient of friction as a function of the Chaplygin and Reynolds numbers. The problem is solved by the methods of one-dimensional gas dynamics. Flow is studied in a channel which belongs to a family with power dependence of pressure on the area of the cross section. Two special cases are considered: a channel of constant cross section, and an expanding channel with zero pressure gradient along the longitudinal axis. No comparison of theoretical and experimental data is made in the paper. Yu. A. Lashkov.

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USSR

UDC: 533.697

TARASOV, F. M.

"Investigation of Nonisothermal Fluid Flow in Flat Channels"

V sb. Kholodil'n. tekhnika. Tr. Nauch. konferentsii (Refrigeration Engineering. Works of the Scientific Conference), Leningrad, 1970, pp 265-271 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B394)

Translation: The Prandtl-Glauert equations for velocity defect are taken as a basis in deriving an equation for velocity distribution in the case of turbulent motion in tubes. The resultant equation contains a correction which accounts for the reduction in the amplitude of turbulent pulsations as the tube walls are approached. The formula is satisfactorily confirmed by experimental data in the investigated range of $R = (3-100) \cdot 10^3$. An analogous equation is obtained for the temperature field when gas is heated in tubes. In flat channels with a gap $h \geq 2$ mm, the nature of turbulent fluid flow is analogous to flow in a tube. In channels with a gap $h < 1$ mm, a sharp reduction in the amplitude of transverse pulsations takes place and mixing deteriorates. Expressions are derived for the Nusselt number. A. S. Malyutin.

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USSR

UDC 681.327.8:621.391

PISKAREVA, S.M., TARASOV, G.I., TVERDOV, B.I.

"Device For Determining Adjusting Capacity Of The Receiving Apparatus Of Discrete Communication Systems"

USSR Author's Certificate No 308327, filed 26 Jan 70, published 23 Aug 71 (from RZh:Elektrosvyaz', No 2, February 1972, Abstract No 2.64.518P)

Translation: A device is proposed for determining the adjusting capacity of the receiving apparatus of the discrete communication systems of Author's Certificate No 221022. With the object of assuring straightforward direct measurement of the values of the adjusting capacity of receivers, the outputs of the coincidence circuits are connected via the time delay elements with the inputs of supplementary coincidence circuits, the second input of which is connected to the output of the pulse comparator, and the inputs of the latter are combined with the outputs of the time delay element and the code converter, connected respectively with the input and output of the receiver. The cadence [taktovyye] inputs of the time delay elements, the code converter, and the comparator are connected with the outputs of the circuit for separation of the fronts of samples.

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USSR

TARASOV, G. A.

UDC 624.07:534.1

"Parameter for Evaluating the Action of Mechanical Impact"

V sb. Vibratsion. tekhnika (Vibration Engineering -- Collection of Works), Moscow, 1972, pp 140-143 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V288)

Translation: It is pointed out that high-frequency oscillations $a_2(t)$ are frequently upon impact superimposed upon the basic relatively slow process $a_1(t)$, so that the change in acceleration can be represented in the form: $a(t) = a_1(t) + a_2(t)$. In this case the characteristics of the impact only in terms of the magnitude of the impulse, maximum acceleration, and duration τ are insufficient. The author proposes that the following quantity be measured in addition:

$$K_{HK} = \frac{1}{a_{1max} \tau} \left[\int_0^{\tau} |a'(t)| dt - \int_0^{\tau} |a_1'(t)| dt \right]$$

and proposes a method for recording this magnitude. Abstracter's note: The criterion recommended by the author does not contain information on the frequency composition of the curve and is inferior to the method of impact spectra used in practice. V. L. Biderman.

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USSR

UDC 539.1.01

VOROB'YEV, A. A., VOROB'YEV, V. A., TARASOV, G. P., Tomsk Polytechnical Institute
imeni S. M. Kirov

"On the Question of Evaluating the Variation in Bremsstrahlung Behind a Plane
Layer With a Cylindrical Cavity"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy - Fizika, No. 12, 1970, pp 123-125

Abstract: This treatment of the problem assumes a source with a continuous spectrum with a Schiff distribution; previous studies assumed a monoenergetic source. An expression is given for the perturbation in the intensity of bremsstrahlung behind a layer with a cylindrical cavity (on the axis of the cavity) under irradiation of the layer by a plane perpendicular beam. The coefficients of the expression for iron are graphed as a function of the thickness of the layer for bremsstrahlung with maximum energies 6 Mev and 30 Mev. The coefficients determine the perturbation and intensity on the axis of the cavity where the contribution of the scattered component should be greatest due to the symmetry of the problem. It is pointed out that the effect of the scattered component is slight, and it is therefore concluded

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VOROB'YEV, A. A., et al, Izvestiya vysshikh uchebnykh zavedeniy - fizika, No. 12, 1970, pp 123-125

that if a plane layer with a cavity is irradiated by a perpendicular beam of bremsstrahlung, the effect of the position of the cavity and its shape on the magnitude of the perturbation in intensity behind the layer is slight. The contribution to the total variation of the scattered component, which gives information on the position and shape of the cavity, is of a magnitude no less than the second order compared with the contribution of the direct component, which carries information on the ray dimension of the cavity (both components being considered infinitesimals).

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USSR

UDC 669.71.053.4(088.8)

BAZHENOV, A. YE., GRECHUKHIN, N. V., OSOKINA, V. K., PAL'CHIKOVA, A. I.,
PAL'CHIKOVA, T. A., TARASOV, I. A., FEDORISOV, V. D., CHALIK, A. D.,
CHERNOV, V. Ye

"Method of Obtaining Cryolite"

USSR Author's Certificate No 312834, filed 3 Mar 70, published 15 Oct 71
(from KZh--Metallurgiya, No 4, Apr 72, Abstract No 46179P)

Translation: The procedure for obtaining cryolite by roasting the slurry at 700-800° formed as a result of wet removal of the gases in aluminum production is distinguished by the fact that in order to improve the quality of the product, the roasted slurry is subjected to water treatment at 35-40° with a L:S ratio of 5-10: 1 with subsequent leaching out of the precipitate by a 2-10% solution of HF at 55-75° with a L:S ratio of 3-10:1. An example is presented.

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USSR

UDC: 535.853.3:535.853.4

TARASOV, K. I., CHIKOV, K. N., Leningrad Institute of Precision Mechanics
and Optics

"A Method of Interference Amplitude Modulation of Radiation"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 7, Mar 72, Author's Certificate No 329409, Division G, filed 13 Jun 68,
published 9 Feb 72, p 161

Translation: This Author's Certificate introduces a method of interference
amplitude modulation of radiation. As a distinguishing feature of the
patent, modulation quality is improved by splitting a parallel light beam
into two coherent light beams propagating parallel to one another, direct-
ing the two beams against two sections located at the opposite edges of a
diffraction grating, combining the beams reflected from the diffraction
grating into a single light beam to produce interference, and rotating the
diffraction grating with respect to an axis passing through one of its edges.

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Radiation Chemistry

USSR

UDC 548.3

MINTS, R. I., MIL'MAN, I. I., KRYUK, V. I., and TARASOV, L. S., Ural Polytechnical Institute, Sverdlovsk, and Institute of Geochemistry and Analytical Chemistry imeni I. V. Vernadskiy, Academy of Sciences USSR, Moscow

"Exoelectronic Emission of Particles of Lunar Anorthosite Rocks Supplied by the Automatic Station 'Luna-20'"

Moscow, Geokhimiya, No 5, May 73, pp 683-688

Abstract: The experiments carried out showed that particles of the lunar anorthosite rocks recovered by the lunar automatic station "Luna-20" possess natural exoelectronic emission. The characteristics of this electronic emission is related to the structural state of the fragments under investigation. With increased degree of recrystallization the number of emission peaks increases, especially of the high temperature peaks. This is accompanied by increased activation energy of the electron ejection. The exoemission parameters (such as temperature, location, number and intensity of the emission peaks, activation energy of the process) lead to an assumption that close to the surface of anorthosite particles there exist structural irregularities which differ by their energetic stability.

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USSR

UDC 669.71.053.4(088.8)

TARASOV, M. S.

"Method of Separating Aluminum From Aluminum-Carbide Alloy"

USSR Author's Certificate No 258593, Filed 15/07/67, Published 30/04/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract
No 2 G140 P)

Translation: In order to increase the extraction of Al and decrease the
consumption of fuel, an aluminum-carbide alloy is treated with an acid
solution at 40-80°. Mineral or organic acids may be used to treat the
alloy.

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1/5 012 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ADVANTAGES, PROBLEMS OF ASSOCIATIONS DISCUSSED -U-

AUTHOR--TARASOV, N.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW SOCIALIST INDUSTRY 10 APR 70 P 2 L

DATE PUBLISHED--10APR70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--INDUSTRIAL ASSOCIATION, MINISTERIAL CONTROL, FINANCE,
INDUSTRIAL MANAGEMENT, INDUSTRIAL PLANNING, CAPITAL CONSTRUCTION,
INDUSTRIAL COMPLEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/1142

STEP NO--UR/0533/70/000/000/0002/0002

CIRC ACCESSION NO--AN0105965

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AN0105965

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. PRODUCTION ASSOCIATIONS HAVE RECENTLY BECOME THE SUBJECT OF EXTENSIVE PUBLIC INTEREST. AN ANIMATED EXCHANGE OF OPINIONS HAS DEVELOPED AROUND THEM. THE ARTICLE BY MOSCOW BOLSHEVICHKA PLANT GENERAL DIRECTOR P. NOSKOY HAS BEEN ACTIVELY DISCUSSED IN SOCIALIST INDUSTRY. THE AGE OF RAPID TECHNICAL PROGRESS HAS WITNESSED THE IMMEASURABLE COMPLICATION OF PRODUCTION CONTROL TASKS, DEMANDING MORE HIGHLY IMPROVED ORGANIZATIONAL FORMS AND A WELL COORDINATED SYSTEM OF RELATIONS BETWEEN THE LOWER LINKS, THE ENTERPRISES, AND THE CENTRAL LEADING APPARATUS, THE MINISTRY. MANY PEOPLE ARE AGREED ON ONE THING: THE ASSOCIATION REPRESENTS A FORM OF CONTROL IN WHICH PRODUCTION IS ORGANIZATIONALLY RAISED TO A NEW LEVEL OF DEVELOPMENT, MAKING IT POSSIBLE TO COMBINE ENTERPRISES' INDEPENDENCE WITH THE BRANCH PRINCIPLE OF LEADERSHIP UNDER THE CONDITIONS OF THE ECONOMIC REFORM. IT IS PRECISELY THE CREATION OF ASSOCIATIONS WHICH IS PROMOTING INDUSTRIAL SPECIALIZATION ON A BROAD SCALE AND THE EFFICIENT APPLICATION OF THE ACHIEVEMENTS OF SCIENCE AND TECHNOLOGY. SINCE 1969, WHEN THE FIRST PRODUCTION ASSOCIATION IN THE LIGHT INDUSTRY WAS FORMED, THE LVOV PROGRESS FOOTWEAR FIRM, THIS FORM OF PRODUCTION ORGANIZATION HAS JUSTIFIED ITSELF TO A SUFFICIENT EXTENT. OUR MINISTRY'S SYSTEM NOW COMPRISES 248 FINANCIALLY AUTONOMOUS PRODUCTION ASSOCIATIONS, EMBRACING ONE THIRD OF ALL THE ENTERPRISES IN THE BRANCH. BUT THERE ARE STILL MANY SMALL SCALE FACTORIES ALONGSIDE LARGE SCALE COMBINES AND ASSOCIATIONS IN THE LIGHT INDUSTRY. THEIR TECHNICAL CONDITIONS AND ECONOMIC POTENTIAL MAKE IT IMPOSSIBLE TO MAKE FULL USE OF THE RIGHTS GRANTED BY THE ECONOMIC REFORM.

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PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AN0105965

ABSTRACT/EXTRACT--RESTRICTED IN THEIR POSSIBILITIES, THEY ARE UNABLE TO
RID THEMSELVES OF ELEMENTS OF PRIMITIVE WORK OR ENTER INTO DIRECT
RELATIONS WITH SUPPLIERS AND CONSUMERS. SO IT IS ALL THE MORE RELEVANT
TO HEED THE EXPERIENCE ACCUMULATED BY PRODUCTION ASSOCIATIONS AND TO
PROBE THE URGENT QUESTIONS OF THEIR EXISTENCE. THE MINISTRY COLLEGIUM
HAS ALREADY GENERALIZED THE ACTIVITY OF A NUMBER OF ASSOCIATIONS AND
ISSUED A SPECIAL INSTRUCTION ENVISAGING THE DEVELOPMENT OF THIS
PROGRESSIVE FORM OF CONTROL. IN LIGHT OF THE RECENT CPSU CENTRAL
COMMITTEE AND USSR COUNCIL OF MINISTERS RESOLUTION ON IMPROVING AND
REDUCING THE COST OF THE ADMINISTRATIVE APPARATUS, THE ROLE OF
PRODUCTION ASSOCIATIONS HAS BEEN DEPICTED STILL MORE CLEARLY. THESE
REPRESENT PRECISELY THE PATH WHICH LEADS TO THE OPTIMAL STRUCTURE OF
CONTROL AND TO THE LIQUIDATION OF INTERMEDIARY LINKS BETWEEN PRODUCTION
AND THE CENTRAL BRANCH APPARATUS. THE DEVELOPMENT OF PRODUCTION
ASSOCIATIONS HAS POSED THE MINISTRY A NUMBER OF QUESTIONS. LET US
SUPPOSE THAT MANY ASSOCIATIONS HAVE VARIOUS STRUCTURES AND DIFFERENT
CONTROL STAFF. IS IT NECESSARY TO MAKE THESE ALL ALIKE? OBVIOUSLY
THERE SHOULD BE NO STEREOTYPING HERE. YET THERE IS A NEED FOR GENERAL
RECOMMENDATIONS ON THE OPTIMAL STRUCTURE OF ASSOCIATIONS. THE MINISTRY
IS PRESENTLY WORKING ON THESE. QUESTIONS CONCERNING INTRAFIRM FINANCIAL
AUTONOMY AND THE ACTIVITY OF THE BOARD OF DIRECTORS ARE ALSO BEING
RESOLVED. BUT THERE IS A CIRCLE OF QUESTIONS WHOSE SOLUTION DOES NOT
DEPEND ON THE MINISTRY ALONE.

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PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AN0105965

ABSTRACT/EXTRACT--LET US TAKE, FOR EXAMPLE, THE CASE WHERE THE SUBSIDIARIES ARE LEGALLY INDEPENDENT: BOTH THE ASSOCIATION ITSELF AND THE SUBSIDIARIES ALSO ENJOY THE RIGHTS OF AN ENTERPRISE. THE RESULT IS AN ENTERPRISE WITHIN AN ENTERPRISE. IT IS NECESSARY FOR THE COMPETENT ORGANS, WITH THE MINISTRIES' PARTICIPATION, TO FORMULATE STANDARD REGULATIONS CONCERNING THE FINANCIALLY AUTONOMOUS PRODUCTION ASSOCIATION WHICH WOULD PROVIDE FOR AN EXTENSION OF THE DIRECTORS' RIGHTS IN THE SPHERES OF PLANNING AND THE CENTRALIZED UTILIZATION OF ECONOMIC INCENTIVE FUNDS AND OTHER MATERIAL AND MONETARY RESOURCES, IN THE SPHERE OF CADRES, AND SO FORTH. IT IS NOW BECOMING OBVIOUS THAT THE TRANSFER TO THE FULL FINANCIAL AUTONOMY OF THE THIRD LINK, THE ASSOCIATION, WHICH HAS BEEN ELEVATED TO THE LEVEL OF THE MAIN COMMITTEE AND DIRECTLY SUBORDINATED TO THE MINISTRY, IS THE SUREST WAY TO THE PERFECTING OF CONTROL. NEW FINANCIALLY AUTONOMOUS ASSOCIATIONS, OPERATING ON THE SCALE OF THE ZONE, REPUBLIC, AND COUNTRY, MUST SOLVE THE MAJORITY OF PROBLEMS EMERGING BEFORE THEM (PLANNING, CAPITAL CONSTRUCTION, UTILIZATION OF MATERIAL AND MONETARY RESOURCES) WITHOUT THE INTERFERENCE OF THE MINISTRY. ENDOWED WITH A FULL COMPLEMENT OF RIGHTS THEY WILL BEAR ALL THE RESPONSIBILITY FOR THE SATISFACTION OF SOCIETY'S REQUIREMENTS FOR ITS BRANCHES PRODUCTION. WITH THE NEW TYPE OF ASSOCIATIONS, THE NECESSITY TO MAINTAIN A HUGE APPARATUS IN THE MINISTRY AND TO HAVE SUPERSTRUCTURAL MAIN ADMINISTRATIONS AND ADMINISTRATIONS DISAPPEARS. THE MINISTRY IS FREED OF DAY TO DAY PETTY WARDSHIP OF THE ENTERPRISES AND CONCENTRATES ITS EFFORTS ON THE SOLUTION OF KEY PROBLEMS OF THE DEVELOPMENT OF THE BRANCH.

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CIRC ACCESSION NO--ANO105965

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--THE CONTROL OF INDUSTRY WILL BECOME MORE FLEXIBLE, AND
EFFECTIVE, THAT IS, IT WILL ANSWER THOSE DEMANDS WHICH ARE PUT FORWARD
IN THE DECISIONS OF PARTY AND GOVERNMENT.

UNCLASSIFIED

USSR

UDC 615.849.2+616-073.916:546.79

BOCHKAREV, V. V., LEVIN, V. I., STANKO, V. I., SEDOV, V. V., KHARLAMOV, V. T.,
KOZLOVA, M. D., and TARASOV, N. F., Institute of Biophysics, Ministry of
Health USSR

"New Radiopharmaceuticals and Prospects for Their Clinical Use"

Moscow, Meditsinskaya Radiologiya, No 1, 1972, pp 4-12

Abstract: Description of the methods of preparation and most important properties of some recent Soviet-developed radioactive drugs based on relatively short-lived isotopes: (a) In^{111} preparations for liver (colloidal solution) and kidney (citrate complex) scanning; (b) iodobenzoic acid with I^{131} to study liver detoxification function; (c) colloidal solution of Pd^{103} for prolonged and uniform preoperative irradiation of tumors of different sites and sizes; (d) combined oleophilic preparations with different isotopes (Y^{90} , In^{111} , Pd^{103} , Au^{198}) for local irradiation of lymph nodes; (e) X-ray contrast media, iodoethiol and iodolinethol, to visualize lymph nodes; (f) resorptive beta applicator with Y^{90} for the treatment of eye tumors (clinical trials of the applicator in a group of patients with melanoblastomas showed complete or partial resorption of the tumor and no recurrences during the observation period (6 months to 2 years). Improvement in the technology of preparing two important

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USSR

3

BOCHKAREV, V. V., et al., Meditsinskaya Radiologiya, No 1, 1972, pp 4-12

diagnostic agents containing I¹³¹ albumin macroaggregates (used for scanning in many lung diseases) and polyvinylpyrrolidone (used in the diagnosis of exudative enteropathy and other diseases) has resulted in marked enhancement of their quality.

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USSR

UDC: 621.375:621.396.66(088.8)

VAULIN, V. Ye., KRISILOV, Yu. D., TARASOV, N. I., Odessa Polytechnical
Institute

"A Device for Automatic Amplifier Control"

USSR Author's Certificate No 267704, filed 30 Aug 68, published 16 Jul 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D113 P)

Translation: This Author's Certificate introduces an amplifier AGC device which contains an AC reference voltage oscillator connected through an attenuator to the amplifier input, a subtraction stage which compares the level of the reference voltage from the amplifier output to the level of the reference voltage from the oscillator output and generates a gain control signal, and also a signal filter connected at the amplifier output. As a distinguishing feature of the patent, the device is designed for increased control depth and decreased instability of the amplification factor with a change in climatic conditions. The unit is equipped with an additional ring for gain control by automatically increasing the level of the high-frequency reference voltage. To this end, the output of the signal filter is connected through an amplitude detector to the controlling input of a stage with variable transmission ratio which is connected between the output of the reference voltage oscillator and the attenuator.

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USSR

UDC 621.791.753.1

TARASOV, N. M., and TSEKHMISTER, I. M., Engineers, Kharkov Aviation Institute

"Current Field in Parts During Spot Welding with Peripheral Compression "

Kiev, Avtomaticheskaya Svarka, No 2, Feb 74, pp 9-11

Abstract: Plane models were used to construct the current field which develops during welding. For convenience of modeling the same materials were used as would be used in full-scale welding operations: M1 copper for electrodes and Kh18N9T steel and brass L62 as the welded material. For modeling the die material, made from R18 steel, Kh18N9T steel foil was used. The use of a compression die in spot welding reduces the depth of the hollow caused by the electrode but the nature of the current field is altered by the use of this die and must be compensated by the use of a larger electrode, a compensating insert (usually copper), or a combination of both. From this investigation it was possible to design electrodes of optimum geometry and then to determine, experimentally, the optimum welding modes of low-carbon steel and Kh18N9T steel with peripheral zone compression. Four figures, two tables, three bibliographic references.

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USSR

UDC 621.791.763.1.001.5

TARASOV, N. M., Candidate of Engineering Sciences, and TSEKHIMISTER, I. M.,
and BARUKHA, N. A., Engineers, Kharkov Aviation Institute

"Spot Welding With Peripheral-Zone Compression"

Moscow, Svarochnoye Proizvodstvo, No 1, 1973, pp 28-30

Abstract: An improved method of spot welding has been proposed (Author's Certificate No 354956) by the Kharkov Aviation Institute. A steel die is used which is pressed by a current-conducting rod on a copper strip previously soldered or tack welded to the piece being welded. Spot welds made with this method were stronger than without compression. The dent made by the electrode is larger when using the compression method, but this is the result of metal shrinkage during solidification and not electrode pressure. Thus, for spot welding of steels with compression of the peripheral zone of the spot the dent from the electrode is significantly diminished, joint deformation decreased, and decorative appearance improved. Welding with compression increases the weld zone in the plastic state and increases joint strength and its stability. Welding with compression requires increased electrode pressure, more careful placement of the electrodes, and their centering and alignment. Six figures, 3 bibliographic references.

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USSR

UDC 621.396.677(088.8)

TARASOV, N. P.

"Wide Band Antenna"

USSR Author's Certificate No 246010, Filed 26 Jun 67, Published 5 Feb 70 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8B29 P)

Translation: The proposed wide band antenna contains a two-wire line and a number of radiating elements attached to it executed in the form of loops on the order of $3\lambda/2$ long. In order to decrease the dimensions of the antenna and narrow the radiation pattern, the dimensions of the loops are selected decreasing from the excitation point. Each loop is fastened in the middle of the side and turn to one of the conductors of the two-wire line. The parameters of the experimental model are presented. There is one illustration.

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USSR

UDC: 621.317.757(088.8)

PAVLYUK, A. P., MIKHAYLOV, V. A., MININ, V. A., TARASOV, N. S., DONSKOY, M. K.

"A Device for Measuring the Bandwidth of Radio Frequency Signals"

USSR Author's Certificate No 255403, filed 4 Apr 68, published 31 Mar 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A324 P)

Translation: It is pointed out that existing devices for measuring bandwidth have a number of disadvantages: a lack of continuous visual monitoring of the spectrum of the emission being studied, inadequate precision, and poor operational efficacy. The purpose of the proposed invention is to automate measurements and improve precision. A block diagram of the device is given and its operating principle is described. E. L.

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USSR

UDC: 621.373:530.145.6

ARKHIPOV, V. K., YERSHOV, Ye. I., PANOV, Ye. I., RYZHAKOVA, Z. L.,
and TARASOV, R. P.

"Generator of Specially Formed Light Pulses Based on the Gas
Laser"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. razboyy
(Electronic Engineering, Scientific-Technical Collection of
Gas Discharge Devices) 1970, No. 3(19), pp 33-36 (from RZh-
Radiotekhnika, No. 3, March 71, Abstract No. 3D250)

Translation: A light-pulse generator is described in which light
signals in the nanosecond range are formed with the deviation of
the light beam of a helium-neon laser LG-56 in an electrooptical
deviating device under the action of a pulse controlling voltage.
The structural peculiarities and the basic output characterist-
ics of the generator are given. Author's abstract

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USSR

ISATAYEV, S. I., TARASOV, ~~S. B.~~, Alma-Ata

"Effect on a Jet of Acoustic Field Directed Along the Axis of the Jet"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No. 2, March-April, 1971, pp 164-167

Abstract: An experimental investigation of the effect of the acoustic field directed along the axis of the jet on the velocity distribution, turbulence and energy spectrum has been conducted.

Air was discharged from a round nozzle of 10 mm diameter at 30.5 meter/sec velocity. A 10 watt acoustic source was located in the stilling chamber upstream from the nozzle. The velocity pulsations were measured by a hot wire anemometer.

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USSR

ISATAYEV, S.I., et al, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 2, March-April 1971, pp 164-167

Experiments were made without acoustic field, with acoustic frequency equal to the natural frequency of the jet and with acoustic frequency several times higher. In the second case there were two peaks in the turbulence versus distance curve; the turbulence at the first peak was 3.5 times higher than in the first case at the same distance. In the third case the turbulence was lower than in the first.

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- 11 -

TARASOV, S. I.

HYGIENIC SIGNIFICANCE OF HOT PARTICLES

(Article by N.A. Novoselova, S.I. Tarasov, V.S. Yezhova, Leningrad Scientific Research Institute of Radiation Hygiene, Kirov Ministry of Health, Moscow, Vsesoyuzniy Nauchno-Issledovatskiy Nauch. SSSR, Russian, No 1, 1972, pp 16-17)

JPAS 55300

UDC: 614.73

17122 72

The discovery of particles with radioactivity of the order of 10^{-4} curies or more in air, and the related assumption that they present a special biological danger if they penetrate into the human organism served as the basis for a series of special investigations. To date more than 100 works have been published in the world literature dealing with highly radioactive particles, which have been named hot particles.

Analysis of the literature indicates that in spite of the complexity of investigating hot particles and the diversity of questions that arise some rather valuable scientific information has been accumulated to date.

It was established that hot particles may appear in the atmosphere as a result of nuclear explosions or in industry. In the course of producing and processing radioisotopes on powerful gamma units and nuclear reactors.

With regard to explaining the mechanism of formation of hot particles following a nuclear explosion, the most importance is attributed to condensation and coagulation of vapor-like explosion products (V.N. Levenchik). It is generally considered that the mechanism of formation of highly radioactive particles under industrial conditions is based on the process of dispersion of material with high specific radioactivity, neutron activation of aerosol particles, and settling of radioactive atoms on inactive dust particles (O.M. Zareyev).

A number of investigations revealed there is a link between concentration of hot particles in the atmosphere and the time of nuclear explosions. It has been indicated that the shape of the particles is arbitrary. Their size ranges from tenths of a micron to several microns. They dissolve poorly in water and biological substrates.

USSR

UDC 612.215.014.2-014.481/.482

KITAYEV, E. M., ORESHINA, A. F., TARASOV, S. I., and YAS'KOVA, V. Z., Laboratory of Radiation Genetics and Remote Radiation Pathology, Central Scientific Research Institute of Roentgenology and Radiology, Ministry of Health USSR, and Laboratory of Hygiene of the Air, Leningrad Scientific Research Institute of Radiation Hygiene, Ministry of Health RSFSR

"Morphological Changes in the Lungs Produced by Single Hot Particles Experimental Study"

Moscow, Meditsinskaya Radiologiya, No 4, 1970, pp 52-56

Abstract: About 100 hot particles (particles of Co60 10-20 microns in size with an activity of 10^{-8} to 10^{-9} C) in 0.2 ml of physiological saline were injected into the jugular vein of rats. Morphological changes in the lungs were studied 5-30 days thereafter. No significant changes were observed in the energy absorption zone. The zone of absorption of doses of 10^2 and 10^6 rads occupied a space with a radius of 200 microns, while destructive changes appeared only within a radius of 15-20 microns. Although there was an absence of focal necrosis, changes were noted in the blood vessels containing particles - homogenization and loss of structure of the walls, swelling of collagenous and argyrophil fibers. The intensity of the destructive processes was unrelated to the size of the radiation

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USSR

KITAYEV, E. M., et al, Meditsinskaya Radiologiya, No 4, 1970, pp 52-56

dose. After 20-30 days, besides the vascular changes, desquamation and necrobiosis of endothelial cells, there were signs of proliferation of cellular elements in the adventitia. The radioactive particles had no effect on the adjacent structures. Thus, the changes observed appear to be comparatively insignificant from the standpoint of injury to lung tissue and impairment of respiratory function.

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1/2 026
UNCLASSIFIED
PROCESSING DATE--09OCT70
TITLE--MORPHOLOGICAL CHANGES IN THE LUNGS OF RATS IN THE ACTION OF SINGLE
FIXED HOT PARTICLES (EXPERIMENTAL RESEARCH) -U-
AUTHOR--(04)--KITAYEV, E.M., ORESHINA, A.F., TARASOV, S.I., YASKOVA, V.Z.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 4, PP 52-56
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MORPHOLOGY, LUNG, RAT, COBALT ISOTOPE, RADIATION BIOLOGIC
TISSUE EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/0955
STEP NO--UR/0241/70/015/004/0052/0056
CIRC ACCESSION NO--AP0109112
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109112

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER SETS FORTH THE RESULTS OF EXPERIMENTAL STUDY OF MORPHOLOGICAL CHANGES IN THE LUNGS OF RATS UNDER THE EFFECT OF SINGLE FIXED HOT PARTICLES. PARTICLES OF CO PRIME60 OF MICROSCOPIC SIZE WITH AN ACTIVITY OF 10 PRIME NEGATIVE9 CURIE WERE USED. THE AUTHORS DEMONSTRATE THE ABSENCE OF FOCAL NECROSIS AT THE SITES OF FIXATION OF SINGLE HOT PARTICLE IN IRRADIATION DOSES OF THE SURROUNDING TISSUES OF 10 PRIME NEGATIVE4-10 PRIME NEGATIVE5 RAD DURING A PERIOD FROM 5 TO 30 DAYS. THERE WERE FOUND SOME MORPHOLOGICAL CHANGES IN VESSELS AT THE SITE OF FIXATION OF PARTICLES AND IN INTERALVEOLAR MEMBRANES WITHOUT A DEFINITE RELATION WITH THE VALUE OF THE RADIATION EFFECT.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--STUDY OF THE UPTAKE OF AIR BORNE PRIME239 PU BY THE HUMAN ORGANISM
-U-
AUTHOR--(05)-SMORODINTSEVA, G.I., TARASOV, S.I., ORESHINA, A.F., SHALAK,
N.I., YASKOVA, V.Z.
COUNTRY OF INFO--USSR
SOURCE--(AEC-TR-7128, PP 235-45) TRANSLATION OF REPORT A-AC-82-G-L-1301
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, ATMOSPHERIC SCIENCES
TOPIC TAGS--PLUTONIUM ISOTOPE, RADIOACTIVITY MEASUREMENT, ATMOSPHERIC
RADIOACTIVITY, LUNG, RADIATION DOSAGE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/1769 STEP NO--UR/0000/70/000/000/0235/0245
CIRC ACCESSION NO--AT0054607
UNCLASSIFIED

2/2 034

CIRC ACCESSION NO--AT0054607

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ARE PRESENTED FOR PRIME239 PU CONCENTRATIONS IN ATMOSPHERIC AIR, HUMAN LUNGS AND LYMPH NODES DURING THE PERIOD 1964 TO 1966. METHODS OF INVESTIGATION AND CALCULATION ARE DESCRIBED. IT WAS FOUND THAT THE LEVEL OF PRIME239 PU IN ATMOSPHERIC AIR WAS FOUR ORDERS LOWER THAN THE MPD FOR THE WHOLE POPULATION. PLUTONIUM 239 DOSES IN THE LUNGS WERE 3000 TIMES LOWER THAN THE MPD FOR THE LUNGS AND 40 TIMES LOWER THAN THE DOSE RESULTING FROM PRIME210 PO. THE DATA SERVED TO SOME EXTENT AS CONFIRMATION OF THE EXPONENTIAL MODEL ADOPTED BY THE ICRP FOR CALCULATING THE PRIME239 PU CONTENT OF HUMAN LUNGS FROM ITS CONCENTRATION IN THE A FACILITY: GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIYU ATOMNOI ENGERII SSSR, MOSCOW.

UNCLASSIFIED

USSR

UDC 577.391

KOROTKIKH, I. M., and ~~TARASOV, V. A.~~ Institute of General Genetics, Academy of Sciences USSR, Moscow

"The Cytogenetic Effect Produced by the Combined Action of X-Rays and thioTEPA on Human Embryo Cells Cultivated in Vitro"

Moscow, Radiobiologiya, Vol 11, No 4, Jul/Aug 71, pp 528-536

Abstract: A cell culture of fibroblasts of human embryos was irradiated with x-rays in a dose of 50 r and then subjected to the action of thioTEPA in concentrations of 3×10^{-5} , 1×10^{-4} , and 3×10^{-4} M. Chromosome aberrations in the anaphase and early telophase stages of mitosis were counted. The combined action of the x-rays and the chemical mutagen in all of the concentrations used resulted in a cytogenetic effect greater than that corresponding to enhancement of the actions of x-rays and thioTEPA applied separately. The maximum increase above the effect corresponding to enhancement was observed in early periods after the combined action.

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USSR

UDC: 681.327.76

2

PECOYEV, A. N., TRIFONOV, V. V., BUDRIS, M. V. K., LEMZYAKOV, S. R., TARASOV, V. A., SHEREMET'YEV, A. K., Leningrad Electrical Engineering Institute of Communications imeni V. I. Ul'yanov (Lenin).

"A Digital Memory Unit"

Moscow, Otkryitya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 9, Mar 71, Author's Certificate No 297071, Division G, filed 10 Dec 66, published 2 Mar 71, p 162

Translation: This Author's Certificate introduces: 1. A digital memory unit based on a magnetostriction delay line with cadence pulse generator. As a distinguishing feature of the patent, the effect of variations in ambient temperature is reduced by adding a magnetostriction resonator in the cadence pulse generator made from the same material as the acoustic line in the delay unit. 2. A modification of this memory unit distinguished by the fact that mismatch between the period of the delay line and the cadence pulse period due to nonuniformity in heating of sections of the device is eliminated by utilizing a heater such as the regulating transistor of an electronic voltage stabilizer for the supply system of the device. 3. A modification of this device distinguished by the fact that the range of permissible variations in ambient temperature is extended by adding a system for precisely

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PEGUYEV, A. N. et al., USSR Author's Certificate No 297071

matching the period of the delay line to the cadence pulse period. The actuating element of this system is made in the form of an electronic switch which controls the above-mentioned heater and an acoustic line heater. This latter heater is another controlling transistor in a stabilizer located on the housing of the acoustic line.

USSR

UDC: 666.6:620.174.05

AKSEL'ROD, Ye. I., VISHNEVSKIY, I. I., KOVALEV, A. I., and TARASOV, V. A.

"Machine for Measuring High-Temperature Deformation in Ceramic Materials by the Pure Bend Method"

Moscow, Zavodskaya laboratoriya, No. 1, 1971, pp 110-111

Abstract: The machine described in this article tests for creep, at temperatures up to 1900° C, densely sintered ceramic specimens by subjecting them to a pure bend. The specimen is heated in a sealed, water-cooled chamber in an electric-resistance oven, and is deformed by a dynamometer consisting of a spring of special steel in the shape of the arc of a circle. Its deformation is measured at the center and at two supporting points by three indicators which can be read through a window in the chamber wall. The temperature of the specimen is measured at its center and its ends by two calibrated tungsten-rhenium thermocouples, type VR5/20. A diagram of the machine, its parts identified by callouts, is given as well as curves of the creep in specimens made of polycrystalline corundum. The authors are members of the Ukrainian Scientific Research Institute of Refractory Materials.

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USSR

UDC 621.383.292.8

PEGOYEV, A.N., TRIFONOV, V.V., BUDRIS, M.V., TARASOV, V.A., LEMZYAKOV, S.R.,
SHEREMET'YEV, A.K. [Leningr. elektrotekhn. in-t -- Leningrad Electrical Engineer-
ing Institute]

"Source Of High Voltage For Supply Of A Photomultiplier"

USSR Author's Certificate No 266860, filed 8 July 66, published 15 July 70 (from
RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A259P)

Translation: The proposed source of high voltage for supply of a photomultiplier
contains a voltage regulator, the input of the comparison element of which is
connected to the output of the first section of the voltage converter. As the
operating element of the regulator a single-cycle pulse generator with controlled
frequency is used, and as a comparison element for the regulator, a silicon
stabilitron. S.D.

1/1

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1/2 012 UNCLASSIFIED
TITLE--USE OF THE MOESSBAUER EFFECT AND EPR IN STUDYING THE ACTION OF
PROTON IRRADIATION ON IRON OXALATES -U-
AUTHOR-(04)-YEREMIN, L.P., SHIPATOV, V.T., TARASOV, V.A., SEREGIN, P.P.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 185-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MOSSBAUER EFFECT, EPR, IRON COMPOUND, OXALATE, PROTON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0856
CIRC ACCESSION NO--AP0118032
STEP NO--UR/0456/70/004/002/0185/0186
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118032

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF IRRADN OF FE OXALATES BY 5-MEV PROTONS WAS STUDIED. THE DOSE VARIED (0.7-7) TIMES 10 PRIME22 EV-G. THE MOESSBAUER EFFECT WAS STUDIED AT 295DEGREESK. WITH INCREASING DOSE THE FE(III) OXALATE (I) CHANGED COLOR FROM GREEN TO YELLOW. THE INTENSITY OF THE LINES CORRESPONDING TO THE QUADRUPOLE SPLITTING OF FE(II) INCREASED IN THE MOESSBAUER SPECTRA. AT 7 TIMES 10 PRIME22 EV-G ONLY FE PRIME2 POSITIVE IONS ARE PRESENT. COMPARISON OF THE I SPECTRA WITH THAT OF FE(II) OXALATE (II) THAT WAS IRRADIATED TO 7 TIMES 10 PRIME22 EV-G SHOWED THAT THE CHEM. SHIFT AND THE QUADRUPOLE APLITTING OF BOTH SPECTRA ARE SIMILAR AND THAT THE IRRADN. BY PROTONS FORMS II. THE CONVERSION IS DUE TO THE STRONG REDUCING ACTION OF C SUB2 O SUB4 PRIME2 NEGATIVE ANIONS SURROUNDING THE FE(III) ION. THE DECREASE IN THE EFFECT OBSD. IN THE IRRADN. OF I WITH UP TO 7 TIMES 10 PRIME22 EV-G IS DUE TO THE DESTRUCTION OF THE CRYSTAL STRUCTURE OF INITIAL I AND THE FORMATION OF A POROUS STRUCTURE OF II CHARACTERIZED BY A LOWER MOESSBAUER COEFF. FACILITY: NAUCH-ISSLED. KHIM. INST., LENINGRAD. GOS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 575.111/.23:635.264

TARASOV, V. A., and RODIONOVA, V. V., Institute of General Genetics, Academy of Sciences USSR, Moscow

"Investigation of the Cytogenic Effects Produced in *Allium fistulosum* Cells by Laser Irradiation"

Moscow, Genetika, Vol 8, No 1, 1972, pp 12-16

Abstract: Laser irradiation (wavelengths 4880, 5682, and 6329 Å) causes a statistically significant increase in the number of *Allium fistulosum* cells with chromosomal aberrations. With increasing doses (0.5-12.8 j/cm² of 4,880 and 6,328 Å beams, the number of mutated cells eventually reaches a plateau. However, a wave length of 5,682 Å produces a maximum effect at a dose of 3.4 j/cm², beyond which the number of cells with restructured chromosomes decreases. The interval between irradiation and fixation of the cells (3-24 hrs) does not change the results. Higher doses of the above wave lengths suppress mitosis. Laser wave length of 106,000 Å induces no significant changes in chromosomal structure. X-ray irradiation (50 and 3,000 r) prior to laser irradiation does not modify the latter's cytogenic effect.

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USSR

UDC 536.722.001.2

CHEKHOVSKIY, V. YA., TARASOV, V. D., and RESHETOV, L. A.

"Experimental Research in the Enthalpy of Al_2O_3 in the 1,400-2,313 K Range"

Khar'kov, Ukr. resp. nauch.-tekhn. konf., posvyashch. 50-letiyu metrol. sluzhby
USSR, 1972, -- sb. (Ukrainian Republic Scientific and Technological Conference
Honoring the 50th Anniversary of the Ukrainian SSR's Metrological Service, 1972
-- Collection of Works), 1972, pp 68-69 (from Referativnyy Zhurnal -- Metrolo-
giya i Izmeritel'naya Tekhnika, No 2, 1973, Abstract No 2.32.972 by V.S.K.)

Translation: The authors present the results of an experimental determination
of the enthalpy of aluminum oxide at high temperatures (on the order of 1,400-
2,313 K) right up to its melting point. The measurements were made by the
mixing method, using large calorimeters with a copper block and an isothermal
casing. Sapphire (with an $\alpha-Al_2O_3$ content of 99.9 percent) and corundum (with
an $\alpha-Al_2O_3$ content of 99.99 percent) were used in the investigation. Fourteen
enthalpy values were obtained in the 1,400-2,313 K range, and the experimental
data were compared with the results of research described in the literature.

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USSR

UDC: 518.5:681.3.06

INCHIN, A. S., TARASOV, V. F.

"Programs for Calculating Multiple, Singular and Coulomb Integrals"

Tr. In-ta mat. i mekh. AN KazSSR (Works of the Institute of Mathematics and Mechanics of the Academy of Sciences of the Kazakh SSR), 1970, 1, pp 140-145 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V747)

Translation: Several programs are presented for computing integrals of arbitrary multiplicity, as well as singular and Coulomb integrals. The general scheme of integration realizes Gauss' formula with equal step with respect to three or five points. Authors' abstract.

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USSR

UDC: 621.317.3(088.8)

TARASOV, V. E., MEL'NIKOV, A. A.

"A Device for Measuring the Difference Between the Periods of Two Electric Signals"

USSR Author's Certificate No 257547, filed 24 Jun 68, published 11 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A285 P)

Translation: This Author's Certificate introduces a device for measuring the difference between the periods of two electric signals. The device contains pulse shapers, counters of the number of periods of the input and reference frequencies, pulse-potential diodes, decoders of the zero state of the counters of the number of periods of the input signal, flip-flops, coincidence stages, inverters, a collector circuit and sign indicators. As a distinguishing feature of the patent, measurement precision is improved by including a reversible counter in the device. The method of connection of the counter is explained in detail in the patent description.

E. L.

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USSR

TARASOV, V. F., TARASOVA, Z. F.

UDC 621.373.531.3(088.8)

"Pulse Shaper"

USSR Author's Certificate No 276154, Filed 18 Dec 67, Published 13 Oct 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G233P)

Translation: A pulse shaper is proposed which contains a master oscillator, an input trigger, a binary counter and a digital-to-analog converter. In order to obtain a series of square pulses with linearly varying amplitude, a counter code memory register is used in it which is controlled by two slave multivibrators. The counter code carry multivibrator is connected to the load resistance of one arm of the trigger, and the multivibrator for clearing the register is connected to the load resistance of the other arm of the trigger.

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UDC 534.222.2

USSR

TARASOV, V. I.

"On the Effect of Turbulent Flow on the Acoustical Efficiency of Ship Mufflers"

Tr. Nikolayev. korablestroit. in-ta (Works of Nikolayev Shipbuilding Institute),
1971, No. 48, pp 132-136 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 68241)

Translation: The acoustical efficiency of ship mufflers for ventilation systems and air conditioning were studied experimentally on a special stand for which the design is given. Marine mufflers with an absorber of Kapron fiber (VT-4) with a thickness of 50 mm covered with a perforated sheet of thickness 2 mm with a perforation coefficient of 23% were investigated. The inner diameter of the mufflers was 100, 200 and 300 mm. The length corresponded to 3 calibers. The velocity range was 0-30 m/sec. The degree of turbulence of the air flow at the input to the muffler varied from 5 to 60%. The efficiency of the mufflers was evaluated in terms of the effect of the installation, i.e., in terms of the difference in the noise level at the output of the system without the muffler and with the muffler. It was found that turbulent pulsations in velocity did not have a notable effect on the scattering of sound and the

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USSR

TARASOV, V. I., Tr. Nikolayev, korablestroit. in-ta, 1971, No. 48, pp 132-136

characteristics of the porous muffler. A drop in acoustical efficiency in the presence of a turbulent flow is caused by the generation of noise by the flow. Formulas and a graphical dependence of the change in the acoustical efficiency of mufflers in the presence of flow are given. 7 ref. G. P. Karaushev.

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Marine

USSR

UDC 629.12.06:628.83

TARASOV, V. I.

"Effect of Air Current Parameters on the Efficiency of Active Fan Silencers"

Leningrad, Sudostroyeniye, No 10, 1971, pp 32-34

Abstract: A study was made of the acoustic efficiency of fan noise silencers in marine ventilation and airconditioning systems. Data are presented on the following factors: 1) the intensity of noise generated by the air current; 2) the nature of variation of the sound wavelength; 3) the degree of deformation of the phase surfaces of the sound field; 4) the characteristics of the sound absorbing material; 5) the nature of variation of the sound propagation rate along the duct; 6) the degree of scattering of the noise in vortexes. Out of all the investigated factors, the noise generated in the silencers by the air current has the greatest effect on their efficiency. The effect of the air current on the silencer efficiency will be observed only in the presence of a difference of no more than 10 decibels between the diminished noise of the source and the noise generated by the air current in the silencer. The sound emission of the air in the silencers is also affected by the degree of turbulence of the oncoming flow. A relation is presented for determining the aerodynamic levels of the noise of fans with silencers. This relation shows

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USSR

TARASOV, V. I., Sudostroyeniye, No 10, 1971, pp 32-34

that the effect of the silencer on the system noise level considering the noise generated by the air current can not only be reduced, but it can result in an increase in the noise intensity. In order to improve the efficiency of air silencers the length and thickness of their sound absorbing lining must be increased, the roughness of the inside surface must be reduced, and the speed and degree of turbulence of the oncoming air flow must be decreased.

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USSR

UDC 681.3.06:51

KHISAMUTIDNOV, V. R., LEGON'KOV, V. I., AVARMENKO, V. S., TARASOV, V. I.

"The "ASIOR" Automated Development Information Support System"

Avtomatizirovannaya Sistema Informatsionnogo Obespecheniya Razrabatok "ASIOR", [English Version Above], Moscow, 1970, 93 pages, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V632 K, unsigned).

Translation: A description is presented of the "ASIOR" automatic engineering information support system, based on the BESM-6 and BESM-4 (M-220) computers. Trends are studied in the development of automated information systems, and the reason for the selection of the "Kristall" information language for automation of information processes is presented. A description is presented of the technological plan for processing of semantic information, types of input and output information, algorithms and programs for processing of information on the BESM-6 and BESM-4/M-220 computers; instructions are presented for processing of documents and requests, indexing and punching, as well as specimens of documents and requests. Problems of coordination of ASIOR with other information systems, including foreign systems, are studied. Recommendations are presented for standardization of formats and the content of input information in order to allow information exchange on magnetic tape. Experimental operation of ASIOR during 1968 in the modes of selective distribution and retrospective retrieval of information showed the ability of the system to perform a broad range of information tasks. ASIOR has been in productive operation since January of 1969. The prospects for improvement of the system are studied.

1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ALLOYING OF THE HIGHER MANGANESE SILICIDE ON THE BASIS OF RESULTS
OF MICROPROBE ANALYSIS -U-
AUTHOR-(04)-NIKITIN, E.N., SIDOROV, A.F., TARASOV, V.I., ZASLAVSKIY, A.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER 1970, 6(3), 604-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--MANGANESE COMPOUND, SILICIDE, SEMICONDUCTOR MATERIAL, BORON
CONTAINING ALLOY, ALUMINUM CONTAINING ALLOY, GERMANIUM COMPOUND,
ELECTRON MICROPROBE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PRGX REEL/FRAE--1996/0827 STEP NO--UR/0363/70/006/003/0604/0605
CIRC ACCESSION NO--AP0118005

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118005

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALLOYED SAMPLES WERE CRYSTD. IN QUARTZ AMPULS BY THE BRIDGMAN METHOD AT A CRYSTN. RATE OF 1 CM-HR. DURING THE CRYSTN. OF LIQ. OF COMPN. MNSI SUB1.7 GE SUB0.03, ONLY PARTIAL DISSOLUTION OF GE IN MN SUB11 SI SUB19 OCCURS. THE EXCESS GE FORMS A UNIFORM IMPURITH IN THE FORM OF A SI-GE SOLID SOLN. THE SOLY. OF GE IN MN SUB11 SI SUB19 IS SIMILAR TO 1.8 WT. PERCENT. THE SUBSTITUTIONAL SOLID SOLN. FORMED HAS THE COMPN. MNSI SUB1.715 GE SUB0.015. THE SUBSTITUTION OF A PART OF SI BY GE SHOULD NOT BE ACCOMPANIED BY A CHANGE IN ELEC. COND.; HOWEVER, A SLIGHT INCREASE IN ELEC. COND. OCCURS, WITH THE THERMAL EMF. REMAINING UNCHANGED. THIS INCREASE IN ELEC. COND. CAN THEN BE EXPLAINED BY INCREASED MOBILITY, WHICH IS CHARACTERISTIC FOR SEMICONDUCTOR MATERIALS WITH A DEFECT STRUCTURE. UPON ALLOYING MN SUB11 SI SUB19 WITH B, THE PPTN. OUT OF A CHEM. COMPD. OF THE COMPN. MNB AND OF FREE SI WAS OBSD. THE HIGH M.P. AND THE REGULAR LINEAR OUTLINES OF BOTH PHASES DISTINGUISHED THESE CRYSTALS FROM A EUTECTIC MIXT. THE SOLY. OF MNB AT ROOM TEMP. IS SMALLER THAN 0.6 WT. PERCENT. ALLOYING WITH B INCREASES THE CARRIER CONCN. WITHOUT NOTICEABLY DECREASING THE MOBILITY. THE DISSOLVED AL CONTENT IN MN SUB11 SI SUB19 ALONG THE LENGTH OF THE BOULE VARIED. IN THE PRESENCE OF GE, THE SOLY. OF AL AND B IN MN SUB11 S SUB19 INCREASE AT LEAST BY ONE ORDER OF MAGNITUDE. FROM ELEC. PROPERTY MEASUREMENTS, THE SAMPLES ALLOYED WITH B AND AL ARE CHARACTERIZED BY INCREASED ELEC. COND. AT HIGH TEMPS. AS COMPARED TO THE PURE MATERIAL. FACILITY: INST. POLUPROVOD., LENINGRAD, USSR.

NOT RECORDED

USSR

BERLOVICH, E. Ye., BLINNIKOV, Yu. S., VAYSHNIS, P. P., VITMAN, V. D., YELKIN, Yu. V., IGNATENKO, Ye. I., PANTELEYEV, V. N., and TARASOV, V.K., B. P.
Konstantinov Nuclear Physics Institute

"Short-Lived Osmium Isotopes"

Moscow, Izvestiya Akademii Nauk SSSR -- Seriya Fizicheskaya, No 12, 1972, pp 2490-2498

Abstract: The purpose of the experiments described in this paper is to detect 175Os and to obtain information concerning gamma irradiation of this and lighter osmium isotopes. The short-lived isotopes were obtained in spallation reactions by irradiating mercury with 1-Gev protons in the synchro-cyclotron of the irradiation conditions vary, inasmuch as the proportion of the different Os isotopes in the specimens depends on the mode of proton bombardment. In the gamma irradiation, the gamma ray spectrum was measured by a Ge(Li) detector, with a resolution of 3.5 kev for a line of 652 kev, and the spectra were recorded by an electronic system including an AI-1024 analyzer, a control block with timer, and the Minsk-22 computer to measure half-lives. Isotopes

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USSR

BERLOVICH, E. Ye., Izvestiya Akademii Nauk SSSR -- Seriya Fizicheskaya,
No 12, 1972, pp 2490-2498

with half-lives of more than 2.5 minutes and less than 2.0 minutes were investigated, and tables of their gamma-radiation spectra are given. Results of the present paper are compared with those of earlier papers. An attempt was also made to find a genetic connection between short-lived osmium and rhenium isotopes, and a table for the gamma irradiation of ^{174}Re is also given.

* Leningrad Institute of Nuclear Physics;

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172 043 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--NARROW LINE RUBY LASER -U-
AUTHOR--(05)-VINOGIN, YU.P.; GIMTYUK, L.N.; NIKASHIN, V.A.; SAKHAROV, V.K.;
TARASOV, V.K.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTRUSK. 1970, 28(1), 168-70.
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--RUBY LASER, MULTISTAGE LASER, LASER EMISSION COHERENCE, LASER
MODULATION, LASER PULSE, LASER POWER OUTPUT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
DUPLICATE REEL/FRAME--1984/0368 STEP NO--UR/0051/70/023/001/0168/0170
RC ACCESSION NO--AP0055153
UNCLASSIFIED

/2 043

UNCLASSIFIED

PROCESSING DATE--09OCT70

RC ACCESSION NO--AP0055153

STRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO LASERS WERE USED IN THE SYSTEM OPERATING STABLY IN A SINGLE FREQUENCY REGION AND THE OTHER AN OUTPUT LASER WITH A PHOTOTROPIC SHUTTER, THE INITIAL ILLUMINATION OF WHICH IS PRODUCED BY THE RADIATION OF THE 1ST LASER. THE ACTIVE ELEMENT OF THE 1ST LASER WAS A HIGHLY UNIFORM RUBY CRYSTAL WITH SAPPHIRE CAPS 12 CM LONG AND 10 CM DIAM. THE QUALITY MODULATOR WAS A SOLN. OF PHTHALOCYANINE IN PHNO SUB2. SINGLE FREQUENCY OPERATION WAS MAINTAINED BY INCREASING THE PUMPING ENERGY 10PERCENT ABOVE THAT OF THE THRESHOLD. THE CRYSTAL OF THE 2ND LASER WAS 24 CM LONG AND 16 MM DIAM. THE SYSTEM USED CAN PRODUCE A POWERFUL SINGLE PULSERADIATION OF VERY NARROW SPECTRAL COMPN.

UNCLASSIFIED

1/2 044 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--AN AMPLIFIER OF SINGLE FREQUENCY LASER EMISSION -U-
AUTHOR-(04)-NIKASHIN, V.A., RUKMAN, G.I., SAKHAROV, V.K., TARASOV, V.K.
COUNTRY OF INFO--USSR
SOURCE--PRIBORY I TEKHNIKA EKSPERIMENTA, JAN.-FEB. 1970, P. 194, 195
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--RUBY LASER, OPTIC AMPLIFICATION, CRYSTAL OPTIC PROPERTY, LASER
EMISSION COHERENCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1455 STEP NO--UR/0120/70/000/000/0194/0195
CIRC ACCESSION NO--AP0106211
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 044

CIRC ACCESSION NO--AP0106211

ABSTRACT/EXTRACT--(U) GP-O-

ABSTRACT. DESCRIPTION OF AN AMPLIFIER OF SINGLE FREQUENCY RUBY LASER EMISSION WITH A LARGE AMPLIFICATION FACTOR ACHIEVED BY TRIPLE PASSAGE OF THE BEAM TO BE AMPLIFIED THROUGH THE AMPLIFIER CRYSTAL. A MAXIMUM AMPLIFICATION FACTOR OF 24 CAN BE ATTAINED BY THIS AMPLIFIER. A BRIEF DESCRIPTION IS GIVEN OF THE SPATIAL STRUCTURE AND THE DEGREE OF COHERENCE OF THE AMPLIFIED RADIATION.

FACILITY: VSESOUZNYI NAUCHNOLSSLEDOVATEL'SKII INSTITUT OPTIKO-FIZICHESKIKH IZMERENII, MOSCOW, USSR.

UNCLASSIFIED

1/2 D38
TITLE--A RUBY LASER WITH A NARROW EMISSION LINE -U-
UNCLASSIFIED
AUTHOR--(05)-VINOGIN, YU.P., GNATYUK, L.N., NIKASHIN, V.A., SAKHAROV, V.K.,
TARASOV, V.K.
COUNTRY OF INFO--USSR
SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, JAN. 1970, P. 168-170
DATE PUBLISHED----JAN70
PROCESSING DATE--18SEP70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--RUBY LASER, LASER RADIATION, LASER EMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/1676

STEP NO--UR/0051/70/028/000/0168/0170

CIRC ACCESSION NO--AP0047994

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0047994

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE POSSIBILITY OF CREATING A SOURCE OF FAIRLY POWERFUL MONOPULSE RADIATION OF NARROW SPECTRAL COMPOSITION. TWO GENERATORS WERE USED IN THIS STUDY: THE FIRST STABLY OPERATING IN A SINGLE FREQUENCY REGIME (ONE TRANSVERSE AND ONE LONGITUDINAL MODE), WHILE THE SECOND, THE OUTPUT GENERATOR, IS A LASER WITH A PHOTOTROPIC λ SWITCH, THE INITIAL BLEACHING OF WHICH OCCURS AS A RESULT OF THE RADIATION OF THE FIRST LASER.

UNCLASSIFIED

USSR

UDC 621.375.82 2

KIDYAROV, B. I., KRIVOSHCHIEKOV, G. V., MITNITSKIY, P. L., SAMARIN, V. I.,
STROGANOV, V. I., TARASOV, V. M.

"Dispersion of Wave Synchrony in a LiIO_3 Crystal"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 399-407 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D858)

Translation: A study is made of the dependence of the nonlinear characteristics of LiIO_3 on the frequency in order to discover new possibilities of applying this crystal for cascade laser emission frequency multipliers. The LiIO_3 crystals in the hexagonal version were grown from an aqueous solution containing 10% HIO_3 with respect to LiIO_3 . The nonlinear characteristics of the crystal were investigated by means of a glass Nd-laser with a broad generation spectrum of 0.008 Å. An experimental check was made of the intensity of the excited second harmonic as a function of the wavelength of the radiation propagated along the direction of synchrony. A study was also made of the dependence of the intensity of the second harmonic on the pumping beam deflection from the direction of synchrony. When determining the magnitude of $d\theta_c/d\lambda$, additional possibilities for a nonlinear frequency discriminator were discovered. The bibliography has 7 entries.

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USSR

UDC 621.375.8

KRIVOSHCHEKOV, G. V., SAMARIN, V. I., STROGANOV, V. I., and TARASOV, V. M.

"Cascaded Frequency Transformation of Laser Radiation in Nonlinear Crystals"

Novosibirsk, Avtometriya, No 5, 1972, pp 106-112

Abstract: An important problem in laser physics is finding means of increasing the range of the radiation. The purpose of this paper is to indicate the possibilities in cascaded frequency transformation of laser devices for setting up powerful sources of coherent ultraviolet radiation. The authors begin their analysis of laser spectral conversion with a system of heterogeneous differential equations describing the radiation in nonlinear crystals with the approximation of slow amplitudes for plane waves in a quasi-stationary process. Recognizing that the process of successive frequency conversions is the same as in excitation of the second harmonic and the composite frequencies, the authors derive expressions for the amplitudes of those waves, assuming that the synchronism condition has been satisfied. A table is given of various

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USSR

KRIVOSHCHEKOV, G. V., et al, Avtometriva, No 5, 1972, pp 106-112

crystals and their parameters, together with bibliography references. Cascaded frequency conversion yields a wavelength of 0.353 microns, representing the third harmonic, in a laser with neodymium glass, at a power of more than 30 MW and with a conversion factor of 4%, as well as fourth and fifth harmonics of 0.265 and 0.212 microns in wavelength respectively. The author notes that many questions of the optimization of pumping source parameters and the process itself still must be resolved before the advantages of cascaded frequency transformation can be realized.

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USSR

UDC 669.183.218.5

TRUBETSKOV, K. M., TARASOV, V. M., ALYMOV, A. A., MOKRUSHIN,
K. D., TAT'YANSHCHIKOV, A. G., CHIZHOVA, V. YA., and YAKUSHIN, V.I.

"Material Balance of the Process in Dual-Bath and Open-Hearth Furnaces"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of
Works], No 75, Metallurgiya Press, 1970, pp 68-73

Translation: A method of determining the yield of usable steel and consumption of metal charge is studied, as well as the methodology of experimental melts with material balance. Data are presented on the consumption of iron in dual-bath and open-hearth furnaces operating with intensive blowing of the bath with oxygen. The yield of iron in a dual-bath furnace is 93.6%, in an open-hearth furnace--93.5%. 2 tables; 3 biblio. refs.

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USSR

UDC 669.183.218.5

TRUVETSKOV, K. M., TARASOV, V. M., KONOVALOV, I. M., MOKRUSHIN, K. D., TAT'YANSHCHIKOV, A. G., and YAKUSHIN, V. I.

"Operation of a Dual Bath Steel Melting Furnace at the Cherepovetsk Metallurgical Plant"

Proisvodstvo Chernykh Metallov (Production of Ferrous Metals - Collection of Works), No 75 Metallurgiya Press 1970, pp 56-68

Translation: The operating indicators of a dual bath steel-making furnace for 1968 are analyzed. The productivity of the dual bath furnace was 1.024 million tons. The technology of melting of steel in the dual bath furnace has a number of specifics in the mode of carbon oxidation, steel heating, and desulfuration and dephosphoration of the metal. Over 60% high-quality structural steel is produced by the furnace. The quality of the metal is equal to that of open-hearth steel. 8 figures; 3 tables; 5 biblio. refs.

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Television

USSR

UDC 621.397:613(088.8)

LEDNEV, I. A., TARASOV, V. M.

"A Television Unit for Transforming Scannograms"

USSR Author's Certificate No 234606, filed 3 November 1967,
published 2 June (from RZh-Radiotekhnika, No 4, 1970, Abstract
No 4G294P)

Translation: A representation of the distribution of radio-active isotopes introduced into the human body is called a scannogram. The proposed unit contains a color forming assembly for transforming various levels of radioactivity into various colors. The assembly has seven sequential circuits of threshold levels along with a logic circuit for transforming these levels into a combination of colors which is observed on the screen of a color kinescope. In order to increase resolution capacity, the unit is also equipped with a stage for limiting amplitude from top and bottom with smooth control of the limiting levels.
Author's abstract

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USSR

UDC: 621.397

LEDNEV, I. A., TARASOV, V. M., PROYMIN, G. S., Institute of Medical Radiology, Academy of Medical Sciences of the USSR

"A Television Device for Conversion of Scannograms"

USSR Author's Certificate No 229728, filed 18 Jul 67, published 9 Jun 70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 120212 P)

Translation: A distinguishing feature of the proposed device is that the dose of radioactive substance introduced is cut down by using a two-beam CRT for scannogram illumination. One beam is defocused and illuminates the region in the form of a circle, while the other focused beam is concentric with the first and illuminates a point at the center of the circle. One illustration. A. M.

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USSR

UDC 621.438

MATUSOVA, M. K. and TARASOV, V. N.

"Results of an Investigation of Axial Turbine Stages"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy--Aviatsionnaya Tekhnika, No 3, 1973, pp 84-89

Abstract: An analysis is made of the results of tests conducted on a number of turbine stages that were investigated on the basis of a model air turbine at $M_1 = 0.6$ and $Re = 6 \cdot 10^5$. There is ascertained the influence of the law of blade twisting, the ratio $\frac{d_{sp}}{12}$, and the value of the radial gap upon the efficiency

of stages with bound and unbound working blades. In the analysis, use was made of some experimental data obtained at the Central Scientific Research, Planning and Design Boiler and Turbine Institute; BITM (Bryansk Institute of Transportation Machinery /?/); Moscow Power Engineering Institute; Moscow Aviation Institute imeni Sergo Ordzhonikidze; LPI (Leningrad /L'vov?/ Polytechnic Institute; Khar'kov Polytechnic Institute); KAI (Kazan' /Kuybyshev?/ Aviation Institute); and the Central Scientific Research Institute of Aircraft Engines. 2 tables. 6 figures. 13 references.

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USSR

UDC 621.165.74.001.5

MAKSUTOVA, M. K., VAVILOV, G. A., TARASOV, V. N., Kazan Aviation Institute

"Influence of Geometry of Turbine Blades on Structure of Flow Before Wheel"

Moscow, Teploenergetika, No 11, Nov 72, pp 37-40

Abstract: This work presents an experimental estimate of the influence of elements of the geometry of the drivewheel of a turbine on the distribution of parameters in the axial gap between the nozzle apparatus and the drivewheel. In stages with identical nozzle apparatus but different methods of twisting of drive blades, the difference in the distribution of parameters around the radius in the space between crowns is significantly less than the difference between calculated and actual values. In stages with untwisted blades, as the rotating frequency decreases, a significant increase is noted in the difference between calculated and experimental values of parameters. The distribution of parameters in stages with broad twisted blades remains practically unchanged as the rotating frequency decreases. In a stage with a rim around nontwisting blades, a change in relative radial clearance of 2-5% has little influence on the nature of change of the flow parameters. As the radial clearance increases, the divergence between calculated and true parameters increases. The absolute

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USSR

MAKSUTOVA, M. K., et al., Teploenergetika, No 11, Nov 72, pp 37-40

velocity increases significantly; therefore, in planning stages with large radial clearances, it is desirable to consider the influence of clearance on angles of attack. When drive blades do not have rims, an increase in clearance causes reinforcement of radial leakage, and the difference between calculated and true values of parameters increases.

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USSR

KONIKOV, A. I., TARASOV, V. P.

"Effect of Fluctuation Noise on ADC for Position-by-Position Coding"

[Tr.] Mosk. Aviats. In-ta [(Works) of Moscow Aviation Institute], 1972,
No 249, pp 89-95 (Translated from Referativnyy Zhurnal Kibernetika, No 6,
1973, Abstract No 6V460, by E. Gabidulin).

Translation: A trivial calculation of the probability of error in a certain
position of an analog-digital converter is performed, if additive noise is
added to the voltage converted.

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UDC: 681.325.3

USSR

TARASOV, V. P.

"Method of Controlling Pulse Noise in Precision Analog Voltage-to-Digital Converters"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1970, vyp. 200, pp 196-203 (from RZh-Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 9, Sep 70, Abstract No 9B554)

Translation: This article contains an investigation of various methods of controlling pulse noise in integrating converters as a function of the noise parameters. A number of methods of combatting pulse noise are proposed, their advantages and disadvantages are analyzed in detail, and the regions of their application are described. There are three illustrations and a one-entry bibliography.

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USSR

UDC: 681.325.3

TARASOV, V. P., KONIKOV, A. I.

"Analysis of the Effect of Pulse Noise on a Precision Analog Voltage-to-Digital Converter"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1970, vyp. 200, pp 204-215 (from RZh-Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 9, Sep 70, Abstract No 9B555)

Translation: The purpose of this paper is to analyze the effect of pulse noise on an integrating analog-to-digital converter. As a result of the study, expressions are obtained which determine the error probabilities of the converters under the effect of pulse noise with the most widespread amplitude distribution laws, and it is shown that for high values of the generalized parameter the converter errors are larger under the effect of noise with a logarithmic-normal distribution. Expressions are obtained which define the worst conversion times as a function of the noise parameters and the converter and which permit correct selection of the aperture time of the integrating converter under the effect of pulse noise with various amplitude distribution laws. There are five illustrations and a three-entry bibliography.

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USSR

UDC 681.14

TARASOV, V. P., Moscow Aviation Institute imeni S. Ordzhonikidze

"Conversion of Low Voltages to Digital Code"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Priborostroyeniye, Vol XIV, No 3, 1971, pp 12-16

Abstract: A study is made of selection of the optimal structure of low DC voltage to digital code converters. An expression describing the optimal structure of this converter is derived by the maximum probability function, and results are presented from the comparative experimental study of two types of such converters. The tabulated data show that with a $U_{\text{signal}}/U_{\text{noise}}$ ratio greater than or equal to 50 both converters retain their initial accuracy. For ratios of $U_{\text{signal}}/U_{\text{noise}}$ less than 50, in any noise range the accuracy of the integrating low DC voltage to digital code converter exceeds the accuracy of the ordinary UP-2 converter significantly. This confirms the theoretical studies indicating that the best procedure for converting low-level voltages to code is the method using analog integration, in particular, the method of two-cycle integration, which has least instrument errors.

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USSR

UDC 681.327.12

KONDRATOV, P. A., SOGOLOVSKIY, YE. P. TARASOV, V. P., L'vov "Order of Lenin Polytechnical Institute

"A Method of Searching for a Graphic Image"

Moscow, Otkrytiya, Izobretneiia, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, 1970, p 138, Patentn no 264819, Filed 30 Sep 68

Abstract: This Author's Certificate introduces a method of searching for a graphic image. The procedure is based on readout by a reflected CRT beam moving horizontally along the line with vertical scanning and following the contour of the image with the use of a scanning circle. As a distinguishing feature of the patent, the speed and reliability of the search are increased by activating the scanning circle when the number of intersections of the vertical scanning beam with the outline of the symbol exceeds a threshold value.

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EQUIPMENT
Aeronautical and Space

USSR

UDC: 528.022.2

AYLAMAZYAN, A. K., BUNYAKIN, S. V., TARASOV, V. S., FILATOVA, O. N.

"An Angle-of-Attack Meter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratztsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331242, Division G, filed 24 Nov 70, published 7 Mar 72, p 114

Translation: This Author's Certificate introduces an angle-of-attack meter which contains a high-pressure receiver whose static pressure chamber is connected to a static and dynamic pressure pickup, while the total pressure chamber is connected to a dynamic pressure pickup, and auxiliary chambers which sense pressures along the upper and lower generatrices of the receiver nozzle are connected to the cavities of a differential pressure pickup. The meter also contains a scale with sliding index. As a distinguishing feature of the patent, precision is improved by connecting a source of information on the magnitude of the Mach number of the air signal systems to the supply winding of the inductive unit of the differential pressure pickup through a summing transformer. The output winding of the differential pickup is connected through a decoupling amplifier to the sine winding of a sine-cosine

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USSR

AYLAMAZIAN, A. K. et al., USSR Author's Certificate No 331242

rotary transformer whose cosine winding is connected to the output of the dynamic pressure pickup amplifier. The output winding of the rotary transformer is connected through an amplifier to the motor of a servosystem which is kinematically connected to the pointer index.

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USSR

UDC: 621.374.33(088.8)

SHULITSKIY, R. N., TARASOV, V. S., CHEREPKO, A. A.

"An Output Device for a Multichannel Pulse Commutator"

USSR Author's Certificate No 270799, filed 17 Jun 68, published 11 Aug 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 16266 P)

Translation: This Author's Certificate introduces an output device for a multichannel pulse commutator. The device contains channel power pulse amplifiers with transformer outputs connected to the logic circuit of the commutator. To increase pulse power in the channels being switched without raising the output power of the channel amplifiers, each output pulse transformer contains an additional winding. The leads of the additional windings of all transformers are connected in series in a ring to form a summation circuit which concentrates the pulse power of the channel amplifiers in the channel where there is no controlling pulse from the logic circuit of the commutator appearing at the amplifier output. Rectifiers are placed in series with the load.

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Acc. Nr.:

AP0046499

Ref. Code: 7480066

USSR

UDC 621.576

ANTONOV, YU. V., REVIKIN, A. V., and TARASOV, V. S.

"Characteristics of a Vortex Tube With Cooling of the Hot End"

Moscow, Kholodil'naya Tekhnika (Refrigeration Engineering), No 1, 1970, pp 15-17

Translation: A description is given of an experimental unit on which tests were conducted of vortex tubes cooled by a bubbling method. Formulas are presented for calculating the reduced temperature drop and specific refrigerating capacity of tubes and the dependence of the reduced temperature drops and specific refrigerating capacity in operation with and without cooling on the cold air fraction. It was established that the refrigerating capacity of tubes only slightly depends on the length of their hot end. (1 table, 7 biblio. ref., 4 illustrations)

Reel/Frame

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USSR

TARASOV, V. V.

"Some Properties of an Essential Function in K-Valued Logic"

Diskretn. Analiz [Discrete Analysis -- Collection of Works], No 20, Novosibirsk, 1972, pp 66-78 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V461, by G. Gavrilov).

Translation: If $g(x)$ is a function in k -valued logic (P_k), the number $|g(E_k)|$, equal to the thickness of the area of values of function $g(x)$, is called the kind of the function, while the set $g(E_k)$ fixes the type of function $g(x)$.

Function $f(x_1, x_2, \dots, x_n)$ of P_k is called essential if it takes on k different values and essentially depends on no less than two variables. Function $f(x_1, x_2, \dots, x_n)$, $n \geq 2$, is described by a table (matrix A_f) containing k columns (according to the number of values of variable x_1) and k^{n-1} rows (according to the number of sets $(\sigma_2, \dots, \sigma_n)$ of values of variables x_2, \dots, x_n). B_t represents a submatrix of matrix A_f , produced from A_f by crossing out $k - t$

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Tarasov, V. V., Diskretn. Analiz, No 20, Novosibirsk, 1972, pp 66-78.

columns and $k^{n-1} - t$ rows. ΦB_t represents the set of all different elements of matrix B_t , while $D_{t+1} \Phi B_t$ is the set of all $(t + 1)$ -combinations (without repetitions) of elements of set ΦB_t . The following statement is proven (lemma 2): where $k \geq 3$, inequality $|\bigcup_{B_2} D_3 \Phi B_2| \geq k - 2$ is fulfilled, where the union

is taken with respect to all submatrices B_2 of second order of matrix A_f .

Then, the main theorem of the work is established: the number of different types of functions of kind $r + 1$, which can be produced in the form of superpositions $f(m_1(x), m_2(x), \dots, m_n(x))$ (where $f(x_1, x_2, \dots, x_n)$ is an arbitrary fixed essential function, $m_i(x)$ are arbitrary functions of kind r), is no less than C_{k-2}^{r-1} ($k \geq 3, 2 \leq r \leq k - 1$). An example is presented of a function of two variables, namely

$$f(x_1, x_2) = \begin{cases} x_2, & \text{if } x_1 = 0, 2, \dots, k-1, \\ x_1, & \text{if } x_1 = 1, \end{cases}$$

in which the lower estimate is reached.

USSR

UDC 542.61:546.831

YAGODIN, G. A., and TARASOV, V. V.

"Rate of Di-2-Ethylhexylphosphoric Acid Extraction of Zirconium from Nitrate Solutions"

Leningrad, Radiokhimiya, Vol 12, No 4, 1970, pp 664-666

Abstract: The authors investigated extraction of zirconium with solutions of di-2-ethylhexylphosphoric acid in various diluents (decane, carbon tetrachloride, chloroform, benzene, octane and decanol). The size of the phase contact surface was determined from the light scattering of emulsions, and the concentration of zirconium in the water phase was determined by analyzing samples at definite time intervals during mass exchange. The water phase (90 cc) without zirconium was poured into the reaction vessel and the organic phase was then added, after which the mixer was switched on. When steady-state conditions were reached in the reaction vessel, a nitrate solution of ^{95}Zr tracer isotope was added. The volume of solution was insignificantly small in comparison with the volume of emulsion and the change in specific surface of contact was disregarded. The water phase was sampled after 1/2

USSR

YAGODIN, G. A., and TARASOV, V. V. , Radiokhimiya, Vol 12, No 4, 1970, pp 664-666

definite time intervals, and the zirconium concentration was radiometrically determined. The results showed that interaction of zirconium with di-2-ethylhexylphosphoric acid takes place in the water phase, the overall rate of extraction being determined by the stage of transfer of the extractant into the reaction phase. The rate of extraction may be calculated from data on the coefficients of mass transfer of di-2-ethylhexylphosphoric acid in the limiting (water) phase.

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--METHOD AND APPARATUS FOR STUDYING EXTRACTION KINETICS IN
ELECTROLYTE NONELECTROLYTE SYSTEMS -U-
AUTHOR--(02)-YAGODIN, G.A., TARASOV, V.V.
COUNTRY OF INFO--USSR
SOURCE--TEOR. OSN. KHIM. TEKHNOL. 1970, 4(3), 426-9 (RUSS)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTRIC CONDUCTIVITY, PHOTOMETRY, MASS TRANSFER, SOLVENT
EXTRACTION, CHEMICAL LABORATORY APPARATUS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0901 STEP NO--UR/0455/70/004/003/0426/0429
CIRC ACCESSION NO--AP0137929
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137929

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMBINED ELEC. COND. AND PHOTOMETRY TECHNIQUE AND AN APP. WITH ITS ELECTRONIC EQUIPMENT ARE DESCRIBED AND WERE USED TO STUDY RAPID MASS TRANSFER IN AN EMULSIFIED (MAGNETICALLY STIRRED AT 1200 RPM) DIETHYLHEXYLPHOSPHORIC ACID (I), C SUB10 H SUB14 (II), H SUB2 O SYSTEM. FORM MEASUREMENTS OF CHANGING ELEC. COND. AND PHOTOCURRENT CHANGES, WHICH ARE INDICATIVE OF THE SURFACE AREAS OF THE PHASES IN CONTACT (PFK), MASS TRANSFER COEFFS. (K SUBC) OF I IN H SUB2 O (CONTINUOUS PHASE) WERE CALCD. AT DIFFERENT INJECTION RATES (ADDNS.) OF II. A NEARLY CONST. VALUE OF K SUBC EQUALS 1.27 M-HR WAS DETD. AT ALL CONDITIONS EVEN THOUGH THE PFK VARIED.

FACILITY: MOSK. KHIM. TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

(18)

BALOSHIN, O. N., BLAGORODOV, A. M., BOLONKIN, B. V., VLADIMIRSKIY, V. V.,
GORIN, YU. P., GRIGOR'YEV, V. K., GRISHIN, A. P., YEROFEYEV, I. A., KOROL'KOV,
I. YA., LUZIN, V. N., MILLER, V. V., NIKOLAYEVSKIY, YE. S., PETRUKHIN, V. N.,
PLIGIN, YU. S., PONOMAREV, L. A., SIROTKIN, S. M., SOKOLOVSKIY, V. V., TARASOV,
YE. K., TIKHOMIROV, G. D., TROSTINA, K. A., TURCHANOVICH, L. K., and SHKURENKO,
YU. P., Institute of Theoretical and Experimental Physics GKI AE (State
Committee for the Use of Atomic Energy)

"The $K^-p \rightarrow K^0n$ Charge Exchange Reaction at a Pulse of 39 GeV/sec"

Moscow, Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

Abstract: The authors present the measurement results from studying the charge exchange reaction of K^- -mesons on protons ($K^-p \rightarrow K^0n$) at a pulse of 39 GeV/sec. The study was carried out using the ITEP 6-m magnetic track spectrometer. The working volume of the magnetic field of the spectrometer was $1.0 \times 1.5 \times 6$ m. Twelve optical spark chambers were located inside the magnet, with each chamber having eight spark gaps (10 mm each). The chamber electrodes consisted of two layers of aluminum foil 14 microns thick. The photographs were taken through a special slit in the magnet yoke. A mirror system made it possible to obtain three stereoprojections of all of the chambers

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BALOSHIN, O. N., et al., Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544 with one camera. The reaction was studied on the negative particle beam of the IFVE accelerator. The K^- -mesons were distinguished by a differential Cerenkov counter. The beam was focused on a liquid hydrogen target 40 cm long which was set approximately three meters from the first chamber of the spectrometer. Approximately $5 \cdot 10^7 K^-$ -mesons were passed through the equipment and 1020 photographs taken. Pairs of uniformly charged tracks were measured on the photographs. The measurement results were then processed on the Razdan-3 computer. Only 270 intersecting tracks were found. A graph is given for the differential cross section of the reaction. The results show that the cross section value of 7.4 ± 1.2 microbarns obtained by the authors in comparison to data obtained for lower energies elsewhere shows the logarithmic dependence of the charge exchange cross section on the pulse, equal to -1.58 ± 0.05 . The authors thank K. G. Boreskov, A. M. Lapidus, S. T. Sukhorukov, and K. A. Ter-Martirosyan for their presentation of the computational results as the dependence of the differential cross section on pulse transfer (do/dt). This dependence is compared with predictions of the Regge pole model.

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USSR

UDC 678.84.01:537

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BAZHENOVA, T. S., PAKHOMOV, V. I., ZHDANOV, A. A., POLYAKOVA, L. L.,
SMIRNOVA, L. N., EKSANOVA, N. D., and TARASOV, Ye. V.

"Electric Properties of the Epoxyorganosilicon Resin ES-9 and Compounds
Based on This Resin"

Moscow, Plasticheskiye Massy, No 2, 1973, pp 21-23

Abstract: Results are reported of the study of electric properties of the compounds based on dianic resin ED-5, polyfunctional resin ETP and epoxy-siliconorganic resin TPE-9 containing triphenylpentamethoxytrisiloxane [resin ES-9]. It was shown that the ES-9 resin is a good, active solvent for compounds based on any epoxy resin prepared for electrotechnical utilization. The ES-9 resin lowers considerably the starting viscosity of the epoxy binder preserving at the same time all of the desired electric properties of epoxy compounds both under normal usage as well as during prolonged heating, increased humidity, and elevated temperature.

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USSR

UDC 678.643.01:53

LI, P. Z., STAROSTIN, V. N., FILIPPENKO, D. M., TARASOV, YE. V., and GORBUNOV, V. N.

"Glass-Textolite Based on Compositions Containing 4-Vinyl-1,2-epoxy-cyclohexane"

Moscow, Plasticheskiye Massy, No 10, 1970, pp 14-15

Abstract: In an attempt to develop materials capable of prolonged exposure to high temperatures, compositions containing 4-vinyl-1,2-epoxycyclohexane (VECH), dioxide of the dicyclopentadiene (DODCP), ED-5 resin and maleic anhydride (MA) were studied. The materials were subjected to a short and long term exposure to high temperatures. Data on thermomechanical properties, weight loss on heating, dielectric permeability and maximum strength on static bending are reported graphically. On the basis of experimental results materials composed of 12.1 VECH + 48.3 DODCP + 39.6 MA or 9.3 VECH + 23.2 DODCP + 23.2 ED-5 + 43.3 MA can be used for prolonged periods at 250°C temperature, while the composition consisting of 16.2 VECH + 48.9 ED-5 + 34.9 MA can be used at 200°C for extended periods.

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Acc. Nr.: AM 0046187

Ref. Code: UR0000

Tarasov, Ye. V.

Algorithm in Optimum Aircraft Design (Algoritm optimal'nogo proyektirovaniya letatel'nogo apparata) Moscow, Mashinostroyeniye, 1970, 363 pp (SL:1839)

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The book deals with algorithmic methods for optimum design of an aircraft by means of digital computers...
It was written for scientists and engineers of the rocket and aircraft industry.

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UDC 621.357.6:66.067.3(088.8)

TARASOV, Yu. A., GARBUZOV, N. V., TSAKHNOVSKIY, I. M., VASIL'KO, N. P.

"Galvanoplastic Method of Manufacture of Metal Filters"

USSR Author's Certificate No 305209, Filed 27/01/70, Published 13/07/71,
(Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No
3 L331 P by K. S. Pedan).

Translation: A galvanoplastic method is suggested for the manufacture of metal filters by means of electrolytic precipitation of a metal layer onto a matrix, differing in that in order to increase the quality of the filters, the process is performed in an electrolyte containing 0.5-4% of a suspension of insoluble organic particles, and the coatings produced are heat treated until the enclosed organic particles are fully burned out. Example. An Ni coating is applied to a matrix from an electrolyte with a composition of (in g/l): $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$ 300; H_3BO_3 30, temperature 50-55°, D_c 2-4 a/dm² and pH 4-4.5. When a powder of an insoluble organic compound such as polyethylene is dispersed in this electrolyte at between 0.5 and 4% with subsequent heat treatment at 400-450° for 1-1.5 hr, it is possible to regulate the quantity of pores in the Ni coatings produced. The pore size in the filter can be changed by changing the dimensions of the particle introduced to the electrolyte. It is pointed out that this method allows the production of filters with high filtering capacity of many metals and alloys.

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Stress Analysis and Stability Studies

USSR

UDC 539.3

TARASOV, YU. L.

"Calculation of Conical and Spherical Shells Loaded Along the Edge of a Circular Opening With Distributed Axial Forces"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institution), 1971, No. 48, pp 51-57 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V189)

Translation: The axisymmetric problem of the action of internal pressure and axial forces uniformly distributed on the ends on conical and spherical shells is discussed. The axial load is represented in the form of the sum of two components in terms of the directions of the tangent to the meridian and normal to the axis of rotation. The second component of the load is self-balancing. The total stress state is considered as the sum of the solutions of two problems: the action of self-balancing distributed forces over the ends and the action of internal pressure and distributed axial forces tangent to the meridian. The familiar Meissner equations are used in solving the first problem for a cone and it is assumed that the shell is sufficiently long and the edge self-balancing load at one end does not produce a stress state at the other end. The solutions of the second problem are taken as momentless. 8 ref. O. B. Lozhkin.

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